

**Resource Report 8 – Land Use, Recreation, and Aesthetics
AES Sparrows Point LNG Terminal & Mid-Atlantic Express Pipeline**

**Sparrows Point Project
Resource Report 8
January 2007**

SUMMARY OF REQUIRED FERC REPORT INFORMATION		
TOPIC	FERC Reference	Report Reference or Not Applicable
1. Classify and quantify land use affected by: a. Pipeline construction and permanent rights-of-way; b. Extra work/staging areas; c. Access roads; d. Pipe and contractor yards; e. Aboveground facilities. • For aboveground facilities provide the acreage affected by construction and operation, acreage leased or purchased, and describe the use of the land not required for operation.	§ 380.12(j)(1)	Section 8.3 and alignment sheets in Resource Report Appendix 1A
2. Identify by milepost all locations where the pipeline right-of-way will coincide at least partially with existing right-of-way, where it will be adjacent to existing rights-of-way, and where it will be outside of existing right-of-way. • This may apply to the offshore as well	§ 380.12(j)(1)	Section 8.3.2, and Resource Report 1 Table 1.3-1
3. Provide detailed typical construction right-of-way cross-section diagrams showing information such as widths and relative locations of existing rights-of-way, new permanent right-of-way and temporary construction right-of-way.	§ 380.12(j)(1)	Resource Report 1, Appendix 1A
4. Summarize the total acreage of land affected by construction and operation of the project. • This applies to the offshore as well	§ 380.12(j)(1)	Table 8.3-1
5. Identify by milepost all planned residential or commercial/business development and the time frame for construction. • Identify all planned development crossed or within 0.25 miles of proposed facilities	§ 380.12(j)(3)	Section 8.4.1
6. Identify by milepost special land uses (e.g., maple sugar stands, specialty crops, natural areas, national and state forests, conservation land, etc. • This applies to the offshore as well, where it may include oyster and other shellfish beds, special anchoring or lighting areas, and shipping lanes.	§ 380.12(j)(4)	Section 8.5
7. Identify by beginning milepost and length of crossing all land administered by Federal, state, or local agencies, or private conservation organizations. • This applies to the offshore as well.	§ 380.12(j)(4)	Section 8.5.1
8. Identify by milepost all natural, recreational, or scenic areas and all registered natural landmarks crossed by the project. • This applies to the offshore as well. • Identify areas within 0.25 mile of any proposed facility.	§ 380.12(j)(4&6)	Section 8.5.2
9. Identify all facilities that will be within designated coastal zone management areas. Provide a consistency determination or evidence that a request for consistency determination has been filed with the appropriate state agency.	§380.12(j) (4&7)	Section 8.5.4
10. Identify by milepost all residences that will be within 50 feet of the construction right-of-way or extra work area.	§380.12(j) (5)	Table 8.4.2-1
11. Identify all designated or proposed candidate National or State Wild and Scenic Rivers crossed by the project.	§380.12(j) (6)	Section 8.5.3
12. Describe any measures to visually screen aboveground facilities, such as compressor stations.	§380.12(j) (11)	Section 8.6
13. Demonstrate that applications for rights-of-way or other proposed land use have been or soon will be filed with Federal land-managing agencies with jurisdiction over land that would be affected by the project.	§380.12(j) (12)	Section 8.7
Additional Information often Missing and Resulting in Data Requests		
Identify all buildings within 50 feet of the construction right-of-way or extra work areas.		Table 8.4.3-1
Describe the management and use of all public lands that would be crossed.		Table 8.5.1-1
Provide a list of landowners by milepost or tract number that corresponds to information on alignment sheets.		Resource Report 1, Appendix 1B
Provide a site-specific construction plan for residences within 50 feet of construction		Section 8.4.4

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Term	Description
"	inches
°F	degree Fahrenheit
bbl	barrels
bbl/h	barrels per hour
AMSC	Area Maritime Security Committee
ANSI	American National Standards Institute
AOR	Area of Responsibility
API	American Petroleum Institute
ASME	American Society of Mechanical Engineers
ATWS	Additional Temporary Workspace
BIA	Bureau of Indian Affairs
BIBI	Benthic index of biotic integrity
BMP	Best Management Practice
BMS	Burner Management System
BOG	boiloff gas
Bscfd / bscfd	billion standard cubic feet per day
Btu	British thermal unit
Btu/(ft ² hr)	British thermal unit per feet squared per hour
C5 plus	pentane plus
CCTV	closed circuit television
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CO	carbon monoxide
COE	U.S. Army Corps of Engineers
COMAR	Code of Maryland Regulations
COTP	Coast Guard Captains of the Port
CROW	Construction right-of-way
CWA	Clean Water Act
cy	cubic yard
CZMA	Coastal Zone Management Act of 1972
DB&B	double block and bleed
DCS	distributed control system
DMRF	Dredge Material Recycling Facility
Dth/day	Dekatherms per day
EA	Environmental Assessment
EIA	Energy Information Administration
EIS	Environmental Impact Statement
EPC	Engineering, Procurement and Construction
ER	Environmental Report
ERC	emergency release coupling

Term	Description
ESA	Endangered Species Act of 1973
ESD	emergency shutdown
ESD-1	Pier Emergency Shutdown
ESD-1-1	Activation of the unloading arm/vapor return arm ERCs on Berth 1 and Berth 2
ESD-2	Total Terminal Emergency Shutdown
FAA	Federal Aviation Administration
FBE	Fusion-Bonded Epoxy
FEED	Front End Engineering Design
FERC	Federal Energy Regulatory Commission
FERC's Plan	FERC's Upland Erosion Control, Revegetation, and Maintenance Plan
FERC's Procedures	FERC's Wetland and Waterbody Construction and Mitigation Procedures
FM	Factory Mutual
fps	feet per second
ft	feet
gpm	gallons per minute
h	hour(s)
H&MB	heat and material balance
HAZID	Hazard Identification
HAZOP	Hazard And Operability
HDD	Horizontal Direction Drilling
HDMS	Hazard Detection and Mitigation System
HHV	higher heating value
HID	High Intensity Discharge
HIPPS	High Integrity Pipeline Protection System
Hp / hp	horsepower
HP	high pressure
HTF	heat transfer fluid
IESNA	Illuminating Engineering Society of North America
in	inch
inches H ₂ O	inches of water
inches Hg	inches of mercury
inches Hg/h	inches of mercury per hour
IP	intermediate pressure
ISO	International Organization for Standardization
Kts	knots
kV	kilovolt
kVA	kilovolt Ampere (one thousand Volt Amperes)
LDC	Local Distribution Company
LFL	lower flammability limit

Term	Description
LHV	lower heating value
LNG	Liquefied Natural Gas
LNG Terminal	Sparrows Point LNG Import Terminal
LOI	Letter of Intent
LP	low pressure
LTD	Level, Temperature, Density
M&R	Metering and Regulator
m ³	cubic meters
m ³ /hour	cubic meters per hour
MAOP	Maximum Allowable Operating Pressure
mbar	millibar
mbar/hour	millibar per hour
MCC	Motor Control Center
mcf	million cubic feet
MCMERG	Mid-Chesapeake Marine Emergency Response Group
MCR	Main Control Room
MDE	Maryland Department of the Environment
MDNR	Maryland Department of Natural Resources
Mg/l	Microgram per Liter
MIS	Management Information System
MLLW	mean low low water
MLV	Mainline valve
MMBtu/hr	million British thermal units per hour
MMcf/day	million cubic feet per day
MMscfd	million standard cubic feet per day
MP	Milepost
mph	miles per hour
MW	megawatt
N/A	not applicable
NAS Pax River	Naval Air Station Patuxent River
NAVD	North American Vertical Datum
NDE / NDT	Nondestructive Examination / Nondestructive Testing
NEC	National Electrical Code
NEPA	National Environmental policy Act of 1969
NFPA	National Fire Protection Association
NGA / NGPA	Natural Gas Act / Natural Gas Policy Act
NHPA	National Historic Preservation Act of 1969
NMFS	National Marine Fisheries Service
NOI	Notice of Intent
No. ins	number of inches
NOAA	National Oceanic and Atmospheric Administration

Term	Description
NO _x	nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
NPL	National Priority List
NPS	National Park Service
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NSA	Noise Sensitive Area
NWI	National Wetland Inventory
NVIC	Navigation and vessel Inspection Circular
O&M	Operations And Maintenance
OBE	Operating Basis Earthquake
OD	Outside Diameter
OSHA	Occupational Safety and Health Administration
P&ID	piping and instrumentation diagram
PAH	Poly Aromatic Hydrocarbon
PCB	Polychlorinated Biphenyls
PCMS	Plant Control and Monitoring System
PCR	Platform Control Room
PDEP	Pennsylvania Department of Environmental Protection
PDM	Processed Dredged Material
PIANC	Permanent International Association Navigation Congress
PM	particulate matter
POTW	Publicly-owned Treatment Works
PPB / ppb	parts per billion
PPM / ppm	parts per million
PPT / ppt	Parts per trillion
psf	pounds per square foot
psig	pounds per square inch gauge
PWSA	Preliminary water way suitability assessment
PVC	Poly Vinyl Chloride
QA	Quality Assurance
QC	Quality Control
RGS	Rigid Galvanized Steel (conduit)
ROW	Right-of-Way
RR	Resource Report
RTD	resistance temperature detector
RTU	remote terminal unit
RUSLE	Revised Universal Soil Loss Equation
SAV	Aquatic vegetation
SCADA	Supervisory Control and Data Acquisition
scfh	standard cubic foot (feet) per hour

Term	Description
scfm	standard cubic foot (feet) per minute
SCUBA	Self-contained Underwater Breathing Apparatus
SHPO	State Historic Preservation Officer
SIP	State Implementation Plan
SIS	Safety Instrumented System
SPCC	Spill Prevention, Control, and Countermeasure
SSE	Safe Shutdown Earthquake
SSURGO	Soil Survey Geographic
STATSCO	State Soil Geographic
SWPPP	Storm Water Pollution Prevention Plan
Tcf	Trillion Cubic Feet
TCP/IP	Transmission Control Protocol/Internet Protocol,
THPO	Tribal Historic Preservation Office
TMDL	Total Maximum Daily Load
TOC	Total organic carbon
Trap	Pig Launcher Receiver Facility
UL	Underwriters Laboratories
UPS	Uninterruptible Power Supply
USCG	United States Coast Guard
USDA	United States Department of Agriculture
USDOE	United States Department of Energy
USDOT	United States Department of Transportation
USEPA / EPA	United States Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
usg	United States gallons
usgpm	United States gallons per minute
V	voltage
VOC	volatile organic compound
WSA	Water way suitability assessment
WWTP	Waste Water Treatment Plant
§	Section

8. LAND USE, RECREATION, AND AESTHETICS

8.1 Introduction

AES Sparrows Point LNG, LLC (Sparrows Point LNG) proposes to construct, own, and operate a new liquefied natural gas (LNG) import, storage, and regasification terminal (LNG Terminal) at the Sparrows Point Industrial Complex situated on the Sparrows Point peninsula east of the Port of Baltimore in Maryland. LNG will be delivered to the LNG Terminal by LNG marine vessels, offloaded from these vessels to shoreside storage tanks, regasified to natural gas on the LNG Terminal site (Terminal Site), and the regasified natural gas transported to consumers by pipeline. The LNG Terminal will have a regasification capacity of 1.5 billion standard cubic feet of natural gas per day (bscfd), with the potential to expand to 2.25 bscfd. Regasified natural gas will be delivered to markets in the Mid-Atlantic Region and northern portions of the South Atlantic Region through an approximately 88-mile, 30-inch outside diameter interstate natural gas pipeline (Pipeline) to be constructed and operated by Mid-Atlantic Express, L.L.C. (Mid-Atlantic Express). The Pipeline will extend from the LNG Terminal to points of interconnection with existing interstate natural gas pipeline systems near Eagle, Pennsylvania. Together the LNG Terminal and Pipeline projects are referred to as the Sparrows Point Project or Project. Both Sparrows Point LNG and Mid-Atlantic Express (hereinafter collectively referred to as AES) are subsidiaries of The AES Corporation.

The Project footprint is located in the counties of Baltimore, Harford, and Cecil in Maryland and the counties of Lancaster and Chester in Pennsylvania. The Terminal Site, which is located entirely within Baltimore County, is a parcel located within a former shipyard. The route proposed for the Pipeline (Pipeline Route), which crosses all of the listed counties, includes industrial, commercial, agricultural, and residential lands. Together, the Terminal Site and the Pipeline Route comprise the Project Area.

As described in Section 1.10 of Resource Report 1, *General Project Description*, The AES Corporation is considering the possibility of building a combined cycle cogeneration power plant (Power Plant) on the Terminal Site. The Power Plant would be configured with one F-Class combustion gas turbine, one steam turbine, and associated auxiliaries. The Power Plant would operate only on natural gas and would produce approximately 300 megawatts (MW) of clean electric power within an area of high energy demand. The Power Plant would be connected to the local utility electric system by an overhead electric power transmission line.

8.2 Objective and Applicability

Resource Report 8, *Land Use, Recreation, and Aesthetics*, addresses existing land uses present within the Project Area, the potential impacts to those land uses associated with construction and operation of the Project, and the measures that will be implemented to avoid, minimize and/or mitigate those potential impacts. This Resource Report also identifies sensitive land uses near the Project, including residences and other special use areas.

This Resource Report provides a description of the potential impacts on land use, recreation, and aesthetics associated with the Project. Section 8.3 provides an overview of land uses. Section 8.4 describes potential impacts to residential and commercial properties. Section 8.5 describes the presence of public land, recreation, and other designated areas. Section 8.6 provides information on visual resources associated with the Project. Section 8.7 describes notification procedures for federal land management agencies with jurisdiction over land proposed to be occupied or crossed by the facilities associated with the Project. Section 8.8 contains references used to develop this Resource Report.

8.3 Land Use

Land use data were compiled from United States Geological Survey (USGS) 7.5-minute topographic quadrangle maps, aerial photographs (base photos used for alignment sheets – Appendix 1A or Resource Report 1, *General Project Description*), and field reconnaissance surveys conducted in May through August 2006. Land uses were classified according to predominant activities occurring within the proposed construction areas. The following descriptions, consistent with the Federal Energy Regulatory Commission (“Commission”) guidance for environmental report preparation and land uses associated with the Project Area, are used in classifying land use in this Resource Report:

Agricultural Land: active cropland, pastureland, hay fields, nurseries, orchards, commercial tree stands, and associated facilities and features, including farm buildings.

Forest Land: wooded lands not being used for other specific purposes.

Open Land: non-forested uplands, including utility rights-of-way and existing fenced maintained lawn associated with aboveground facilities.

Wetlands/Waterbodies: wetlands and waterbody crossings equal to or less than 100 feet.

Open Water: waterbody crossings greater than 100 feet.

Residential Land: residential yards, residential subdivisions, and planned new residential developments.

Industrial/Commercial Land: electrical power or gas utility stations, manufacturing or industrial plants, landfills, mines, quarries, commercial or retail facilities, and roads.

Other: miscellaneous special use areas (land associated with schools, parks, places of worship, cemeteries, sports facilities, campgrounds, golf courses).

Table 8.3-1 identifies the impact types associated with each of the Sparrows Point Project components, and summarizes the total acreages associated with both temporary and permanent impacts for each Project component.

8.3.1 Terminal Site

The Terminal Site was formerly owned and operated by Bethlehem Steel Corporation as a steel manufacturing and shipbuilding facility. Currently, the Terminal Site is owned by SPS Limited Partnership LLLP as part of a larger 226 acre parcel that was separated from the larger Bethlehem Steel tract. The 80-acre Terminal Site consists of approximately 45 acres of industrial land and 35 acres of nearshore riparian rights area. This area is shown in Figure 1.3-2 of Resource Report 1, *General Project Description*. Industrial lands composed of abandoned buildings, roads, docks, and railroad beds make up and surround the Terminal Site.

Construction of the LNG Terminal will be accomplished within an area totaling approximately 80 acres (Figure 1.3-2; approximately 45-acres land area and 35-acres riparian rights water area). During the construction period, an additional, approximately 35 acres will be used for the dredge material recycling facility (DMRF) and temporary staging and equipment storage areas. The DMRF will include a 5-acre processing area and 10-acre storage area for the processed dredge material (PDM – see Figure 1C-3 of Appendix C to Resource Report 1, Dredge Material Recycling Facility Plan). The temporary staging and equipment storage area will include approximately 20 acres as additional temporary workspace (see Resource Report 1, Figure 1.3-2, Sheet 7, Terminal Construction Additional Temporary Workspace). After construction has been completed, these areas will be cleaned up and restored to pre-construction conditions. Following construction, the land-side 45-acre area of the 80-acre terminal property will continue to be retained as a permanent operational area. Because the Terminal Site and all surrounding property are currently zoned for industrial purposes, construction of

the LNG Terminal will not result in any change in land use in this area. Such usage of the land area is entirely consistent with the Baltimore County Master Plan (BC Plan).¹ The BC Plan identified the area of the proposed Terminal Site as industrial (for purposes of land use), as an industrial employment area (for purposes of development policy), and as high ground with pollution potential (for purposes of environmental policy). The BC Plan also encouraged the re-use of land at Sparrows Point for new industrial purposes.

Aquatic areas affected by the construction of the LNG Terminal include the 35-acre riparian rights area, the dredge area, and the routes of transit of barges between dredge locations and the DMRF. Directly affected areas during construction consist of approximately 118-acres comprising the approach marine channel, the turning basin, and near-shore areas around the berths. The shoreline along the 35-acre riparian rights area will also be impacted for the proposed construction of the bulkhead. The new bulkhead alignment will consist of approximately 2,175 linear feet of sheetpile wall, as shown on Figure 1.3-2a of Resource Report 1, *General Project Description*. More detail on the areas affected and potential impacts are provided in Section 2.4.8.2 of Resource Report 2, *Water Use and Quality*.

Construction and operation of the LNG Terminal is also consistent with the future development plans of Dundalk and Turner Station, which are two of the communities closest to the Terminal Site. A discussion of the consistency of those plans with the activities proposed by AES at the Terminal Site is contained in Section 5.4.1.9 of Resource Report 5, *Socioeconomics*.

8.3.2 Pipeline Facilities

The proposed Pipeline will consist of approximately 88 miles of 30-inch outside diameter natural gas pipeline that will extend from the LNG Terminal in Baltimore County, Maryland to three points of interconnection in Chester County, Pennsylvania. The Pipeline Route is shown in Figure 1.3-3 in Resource Report 1, *General Project Description*.

Construction and Permanent Rights-of-Way

The Pipeline will be installed within a 50-foot-wide permanent right-of-way (ROW). During construction in non-agricultural lands, 25 feet of additional temporary space will be required (in the aggregate, a temporary 75-foot construction right of way ("CROW")) to allow crews to safely construct all Pipeline facilities. In areas where additional working width is necessary (e.g., stockpile topsoil in agricultural lands), the CROW may be expanded up to 25 feet to accommodate the additional need (thus comprising a 100-foot CROW). Typical configurations for the Pipeline ROW and CROW are shown on Resource Report 1 Figure 1.3-5. Similarly, in areas where the ROW must be restricted (e.g., near residential areas) the CROW would be reduced accordingly. The CROW will be expanded or reduced as necessary (i.e., by length and/or width) as shown on alignment sheets (see Resource Report 1, *General Project Description*, Appendix 1A) to accommodate crew needs and site conditions. Additional temporary workspace (ATWS) will be used where necessary to accommodate construction methods, materials, and/or equipment (e.g., road and railroad crossings, equipment turn-arounds, and waterbody crossings).

Land uses for the Project were measured by approximate length, and acreage was calculated for each land use type using polygon analysis for both the permanent and temporary ROW. The polygons approximate the land associated with the ROW and work spaces as the alignment crosses different land uses. Because the different land use types are not always crossed at right angles, or cross the entire ROW, there is not necessarily a direct length times width acreage calculation.

¹ During the scoping meetings, an interested party introduced the Baltimore County Master Plan 1989-2000, as amended July 27, 1989, into the process. That is not the most current plan. The latest Baltimore County Master Plan (Master Plan 2010) was adopted by the Baltimore County Council on February 22, 2000. For purposes of the discussion above, AES's intended use of the Terminal Site is consistent with both the older plan introduced by the interested party and the plan currently in effect.

Land use types along the Pipeline Route consist of forest land, agricultural land, wetlands/waterbodies, roadways, open land, residential land, and industrial/other land. Table 8.3.2-1 provides quantitative data for the impacts of temporary construction workspace and permanent maintained ROW requirements on these land use types, including linear distance, percentage, and acreage. Table 8.3.2-2 provides similar data for all ATWS areas.

Agricultural land is the dominant land use type along the Pipeline Route, comprising 234,338 linear feet (approximately 545.5 acres) and approximately 50.5 percent of the total distance. Agricultural land along the Pipeline Route consists primarily of hayfields and pastures. Agricultural land will be temporarily impacted during construction of the Pipeline, including the temporary removal of approximately 270.56 acres from use during construction, and will be restored to its original state after installation is complete. The approximately 274.96 acres of permanent maintained ROW for the Pipeline will have no permanent impact on agricultural land because it will also be restored to preconstruction conditions and agricultural practices, including cultivated crop production and/or pasture land, following construction.

Forest land is the second largest land use type along the Pipeline Route, comprising 114,364 linear feet (approximately 250.4 acres) and approximately 24.7 percent of the total distance. Forest land along the Pipeline Route consists of both deciduous and coniferous forests. Of the approximately 250.4 total acres cleared for construction, approximately 116.3 acres will be allowed to naturally revert to a forested condition following construction. However, the permanently maintained ROW for the Pipeline will result in some loss of forest because approximately 109.1 acres of forest land will be permanently maintained as open land following construction.²

Residential development is the third largest land use type along the Pipeline Route, comprising 51,753 linear feet (approximately 108.8 acres) and 11.2 percent of the total distance. Residential development along the Pipeline Route consists of 179 residences located within 50 feet of the construction workspace (see Section 8.4). Approximately 60.7 acres of residential development will be incorporated into AES's permanently maintained workspace. AES will adjust its temporary construction workspace through these three areas to facilitate construction of the Pipeline (see Section 8.4). Although approximately 48.0 acres of residential development will be temporarily impacted during construction, there will be limited permanent impacts to these areas because they will be restored to preconstruction conditions, and residential uses will be continued along the permanently maintained right-of-way following construction. However, certain residential practices may be restricted or prohibited within the 60.7 acres of permanently maintained right-of-way (such as erection of permanent structures and planting of deep rooted vegetation/trees over the permanently maintained ROW). In no instance is it anticipated that construction or operation of the Pipeline will result in demolition or removal of residential structures and, as with forested land discussed above, AES is minimizing impact by preferentially following existing ROW corridors where feasible and deviating away to non-residential or other lower-intensity residential usage where greater impact would otherwise result from following the existing ROW (see also the pipeline route *Variations* section of Resource Report 10 – *Alternatives*).

Industrial/commercial land is the fourth largest land use type along the Pipeline Route, comprising 35,592 linear feet (approximately 73.9 acres) and approximately 7.7 percent of the total distance. This land use type consists primarily of utility easements, impervious surface and landscaped areas associated with parking lots of commercial development, as well as numerous road crossings. Approximately 41.8 acres of industrial/commercial land will be incorporated into AES's permanently maintained right-of-way. AES will consult with the appropriate agencies so that construction across existing roads will be performed in accordance with applicable state and/or local permit stipulations for road crossings.

² As described in more detail in Resource Report 3, *Vegetation and Wildlife*, Section 3.4, the impacts associated with the permanent loss of forest land are mitigated by AES's proposed routing of the Pipeline along existing open ROW corridors for the majority of the Pipeline Route. Much of the proposed route will not involve the creation of new corridors through wooded property.

Wetlands/waterbodies (including open water) is the fifth largest land use type along the Pipeline Route, comprising 16,257 linear feet (approximately 28.6 acres) and approximately 3.5 percent of the total distance. The open water land use type consists of one major waterbody crossing, the Susquehanna River, and several minor and intermediate water body crossings. Resource Report 2, *Water Use and Quality*, and Resource Report 3, *Vegetation and Wildlife*, discuss the temporary and permanent impacts of Pipeline construction on wetlands and waterbodies.

Open land is the smallest land use type along the Pipeline Route, comprising 11,378 linear feet (approximately 24.0 acres) and approximately 2.5 percent of the total distance. As defined above, open land along the Pipeline Route consists of undeveloped land and utility rights-of-way (pipeline and power line). Open land will be temporarily impacted during construction of the Pipeline, including the temporary clearance of approximately 10.7 acres. However, the approximately 13.3 acres of permanently maintained right-of-way for the Pipeline will not permanently impact open land because it will be either restored, or allowed to naturally revert, to open land conditions following construction.

Existing Rights-of-Way

In selecting its proposed route for the Mid-Atlantic Express Pipeline, AES has sought to maximize the use of existing utility corridors, consistent with conventional routing principles for natural gas pipelines and the environmental review guidelines employed by the FERC and U.S. Army Corps of Engineers (COE). Through its use of existing utility corridors and highway ROWs, AES's proposed route minimizes the potential impacts to the environment, landowners and other stakeholders associated with construction of the Pipeline. This approach also ensures that construction of the Pipeline is technically and economically feasible.

A total of approximately 75.0 miles (91 percent) of the overall route length is located parallel to, and wherever possible overlapping with, existing utility and highway ROWs. Table 1.3-1 Summary of Existing Rights-of-Way Paralleled by Pipeline included within Resource Report 1, *General Project Description* provides a summary where the Pipeline either parallels or coincides with existing utility and highway rights-of-way along the Pipeline Route. Typical layouts of Project construction and permanent ROWs that parallel these existing ROWs are included in the BMPs contained in Resource Report 2 (Appendix 2B).

Existing ROWs include sides of roadways and railways, electric transmission line corridors, other pipeline (petroleum, natural gas, etc.) corridors, or other setback areas. AES used maps and aerial photographs to identify these ROWs during the initial planning stages of the Project. During the course of in-field investigations and surveys, AES determined that there were some areas where the existing ROW was not sufficiently wide to allow installation of the proposed Pipeline entirely within the existing ROW corridors. In such cases, AES has sought to locate the Pipeline on the edge of the existing ROW, and intends to pursue shared ROWs with the existing easement owners. Such cooperative planning efforts will help to minimize newly-created ROW easements for portions that do not completely overlap. AES identified other situations during the course of its in-field investigations where housing or other structures had been built close to the existing utility ROW since the time the ROW. In those instances, AES evaluated route variations that diverge from the existing ROWs. These variations are discussed in further detail in Resource Report 10 - *Alternatives*. Where route variations are not practical, AES intends to utilize special construction techniques to avoid, minimize and/or mitigate potential impacts to residential neighborhoods and other structures.

8.3.3 Aboveground Facilities

Construction of the Pipeline will require installation of nine mainline valves and three interconnect metering facilities (Table 8.3.3-1).

The permanent land requirements for these facilities are limited to the footprint of the facility and sufficient area to secure the sites with fencing and provide needed access. A typical layout of meter-regulator and interconnect facilities is provided in Resource Report 1, *General Project Description*,

Figure 1.3-7. Additional land at these locations will be required on a temporary basis during construction to provide sufficient access and adequate space for material laydown, equipment, and worker safety. Following construction, land use in temporary construction workspaces will be restored or allowed to revert naturally to preconstruction land use types and vegetation cover types. Some permanent land use impacts will result, but they are expected to be minimal and will overlap to the extent practicable with existing pipeline ROW associated with the existing facilities. These areas are necessary for the retention of permanent operational area.

Table 8.3.3-1 provides the location of each of these aboveground facilities, summarizes the land use types, and provides the acreages associated with both temporary and permanent impacts to these land use types.

8.3.4 Staging Areas

AES has selected the location of staging areas including pipeline and contractor yards. A total of 350 acres will be utilized for staging areas at the Terminal Site and along the pipeline. Table 8.3.4-1 provides the location of each of these areas, size and summarizes the land use types. The locations are provided on Figure 1A of Resource Report 1, *General Project Description*.

With respect to the proposed LNG Terminal, AES is proposing a 10,000 cubic yard per day DMRF that will occupy approximately 5 acres of the upland portion of the Terminal Site as shown on Figure 1C-2 of Resource Report 1, *General Project Description*. Existing site roadways will be used to transport the PDM from the pugmill processing system to the temporary PDM storage area. The temporary PDM storage area will consist of an additional approximately 9.5 acre area (area for DMRF use comprising a total aggregate area of approximately 15 acres) covered by bituminous paving or lined with a 10-mil HDPE (high density polyethylene) liner covered by 6- to 12-inches of existing site soil or imported soil. Additionally, AES is proposing to use an area, approximately 20 acres, to the north of the site, for construction laydown and marshalling yard for equipment (Figure 1.3-2, Sheet 7 of Resource Report 1).

Impacts from staging areas along the Pipeline Route will not permanently impact the land. The staging areas are temporary and will be restored to preconstruction conditions following construction. Furthermore, prior to utilizing the selected staging area, the sites will be assessed for wetlands and other sensitive land uses. The result of these surveys will be provided to the Commission upon completion. Use of these identified areas will be avoided during and after construction.

8.3.5 Access Roads

To the maximum extent practicable, access for both construction crews and the delivery of materials and equipment for the Project will be from the intersection of the Project with existing permanent public and private roads and public highways. However, construction of the Pipeline, including associated aboveground facilities, will also require the temporary use of additional existing access roads and the construction of new access roads.

Land use data for areas crossed by access roads is included within Table 8.3.5-1. Access roads are also identified on the USGS topographic Quadrangle maps of Appendix 1A to Resource Report 1, *General Project Description*.

Land use types crossed by these access roads are discussed below by Project component. The effects of temporary use of access roads on any adjacent residences and businesses during the short-term construction period will be similar to those for other construction activities (see Section 8.4.4).

Terminal Site

Existing permanent public and private roads will be utilized to access the Terminal Site, and no modifications or improvements to these roads are anticipated. Access to the Terminal Site will be the

same for both activities associated with the LNG Terminal and those associated with the Power Plant (if constructed). A listing of roads and areas affected by access roads has been included in Table 8.3.5-1.

Pipeline

The Pipeline Route will require the use of 69 existing temporary access roads and the construction of 11 new access roads (Table 8.3.5-1). Land use types crossed by the access roads consist of agricultural land, industrial/commercial, residential and forest. Table 8.3.5-1 describes the access roads, identifies the land use types, and provides quantitative data for the impacts of these access roads on these land use types, including linear distances, widths, and acreage.

Some of the existing access roads may require planned upgrades, for use during construction, including resurfacing, gravel fill and widening. Surveys including wetlands and cultural resources will be conducted on access roads prior to final selection and utilization. The results of the surveys will be provided to the Commission as they are completed.

Aboveground Facilities

The location of temporary and permanent access roads associated with the aboveground facilities is included within Table 8.3.5-1. Land use data for areas crossed by access roads consists of residential, agricultural and existing ROW.

8.3.6 Facility Abandonment/Replacement

The LNG Terminal designs allow for expansion if warranted by future market conditions. For example, the LNG Terminal equipment and site design layout could support installation of a fourth LNG storage tank and also could support an upgrade in system vaporization and sendout capacity to up to 2.25 bscfd. AES presently does not have any specific plans for such an expansion. However, if AES were to evaluate the feasibility of such an expansion, no associated expansion of the Pipeline would be required.

AES also may consider additional Pipeline interconnections, in addition to those described in this Resource Report, if warranted by market conditions. If market conditions change such that additional interconnection(s) to the Pipeline is warranted, AES would seek all required authorization(s) from the FERC and other regulatory agencies. While no set of circumstances is currently foreseen that would result in the physical expansion of the Pipeline, should changes in market conditions occur that would justify such expansion, AES would seek all required authorization(s) from the FERC and other regulatory agencies.

The Project does not involve the abandonment or replacement of any existing facilities. At some time in the future, facilities associated with the Project could be decommissioned and abandoned, but the circumstances and timing are not known and cannot be predicted with any reasonable accuracy (see discussion in Section 1.7.2 of Resource Report 1, *General Project Description*).

8.4 Residential and Commercial Areas

8.4.1 Landowner and Agency Notification and Consultation

In accordance with 18 CFR §157.6(d), AES will provide notification of the filing of its application with FERC to landowners, towns, communities, and local, state and federal governmental entities with jurisdiction over or an interest in the Project. Such notice will be mailed within three business days of the date on which the Commission issues notice of the AES application. AES will also publish a notice of the application in a daily or weekly newspaper of general circulation in which the Pipeline facilities are located, within 14 days after the Commission assigns a docket number to the application.

The majority of land crossed by the Project is privately owned (approximately 94 percent). Temporary and permanent easements will be acquired from landowners to build the Pipeline. Appendix 1B of *Resource Report 1* contains the names and addresses of all landowners affected by the Project, based on the current alignment and anticipated construction workspaces. Over the last several months, AES has attempted to communicate directly with affected landowners concerning all aspects of the Project. AES provided notice to landowners of its informational open houses held in May and June 2006, and invited public participation at those meetings. Prior to those public outreach meetings, AES met informally with numerous community organizations, many of which included affected landowners. At the time of the public outreach open houses, AES also provided affected landowners with a letter that introduced the Project, invited contact with AES representatives, and requested survey access permission. Furthermore, prior to the start of the Pre-Filing process, AES developed and continues to maintain two websites – <http://www.aessparrowspointlng.com> and <http://www.mid-atlanticexpress.com> – that provide information about the Project, Project geography, safety, anticipated impacts of the Project on the local economy and ecology, as well as general information about LNG safety and potential environmental impacts. AES employed nine field land agents who have been able to contact 99 percent of affected landowners, which landowners have since granted AES survey access permission for approximately 96.5 percent of the Project Area property needed for the preferred Pipeline alignment, and including property for Pipeline Route variations in areas where one of more localized route variations are under consideration. AES will continue to coordinate with public and private landowners for survey access and to provide Project information and responses to questions through its land agents and project personnel. The process of seeking and obtaining easements for private land, and licenses or permits for public land crossings, will be performed in conjunction with the AES application process to the Commission, and timed to be consistent with the anticipated date of issuance by the Commission of the requested authorizations.

Notification and consultation with county and municipal agencies was initiated in June 2006 to request information for land uses associated with existing residences and buildings, planned residential and commercial/business developments and subdivisions, and special use areas. Copies of agency notification and consultation documents are provided in Appendix 8A of this Resource Report, and a list of agency contacts is provided in Table 8.4.1-1.

As summarized in Tables 8.4.1-1, AES contacted and sent letters to county and local planning agencies, and followed up with telephone calls, requesting assistance in providing any information that will help prepare a thorough assessment of potential impacts to existing and proposed land uses within the areas under their jurisdiction or administration, including requesting the identification of specific land uses of local significance or concern in the immediate vicinity of the Project Area. In many cases, AES was directed to land use information contained in publicly available geographic information system (GIS) databases. Special land uses specifically identified included planned residential, commercial, or business development; land owned by local public agencies; land owned by local private conservation agencies (nature preserves, conservation areas, or wildlife management areas); locally significant historic or cultural sites or properties; locally significant natural, recreational, or scenic areas (including roads and viewsheds); locally owned public or recreation areas (such as campgrounds, golf courses, race tracks, etc.); flood control land; landfills and hazardous waste sites; and/or quarries or mines. These are discussed in greater detail below.

Copies of agency notification and consultation documents are provided in Appendix 8A of this Resource Report, and a list of agency contacts is provided in Table 8.4.1-1.

8.4.2 Planned Residential and Commercial Development

General information for land use in the Project Area was obtained from such sources as web sites, aerial photographs of the Project Area, and discussions with local agencies. AES also initiated consultation with county and local planning agencies in June 2006, to identify all planned residential or commercial/business developments and subdivisions that will be crossed by, or located within, 0.25 mile of the construction workspaces for the Project.

Of the 23 county and local planning agencies contacted, five provided specific land use information. Harford County, Maryland identified 11 planned residential or commercial developments within 0.25 mile of the construction workspaces for the Project, which are listed in Table 8.4.2-1 - Planned Residential and Commercial Development Within 0.25 Mile of the Construction Workspace for the Sparrows Point Project (Harford 2006). Where reasonably ascertainable, AES has provided plats depicting the planned development and estimated construction dates for parcels crossed by the Pipeline Route, which are included within Appendix 8B of this report. No other municipality provided information that indicated planned residential or commercial developments within 0.25 mile of the construction workspaces for the Project.

If AES receives new information from county and/or local planning agencies identifying the locations and timeframes for any planned residential or commercial/business developments and subdivisions that will be located within 0.25 mile of the construction workspaces for the Project, AES will propose coordination and/or mitigation measures to avoid or minimize potential construction-related impacts of the Project on any planned residential or commercial/business developments and subdivisions.

8.4.3 Existing Residences and Businesses

Table 8.4.3-1 lists the distances and directions to residences and other buildings within 50 feet of the construction workspace for the Terminal Site, the Pipeline, the Power Plant (if constructed), and the aboveground facilities associated with each of those components of the Project. In total, 179 residences and 52 other buildings (46 along the pipeline and 6 associated with the terminal area) are located within 50 feet of the Project.

8.4.4 Project Impacts and Mitigation

Planned Residential and Commercial Development

As indicated above, AES contacted counties, towns, and other municipalities along the proposed Project corridor for information on planned residential and commercial development in the Project Area. Mitigation measures to address proposed residential and commercial development may include such items as avoiding removal of mature trees and landscaping within the edge of the construction workspace unless necessary for the safe operation of construction equipment; restoring all lawn areas and landscaping within the construction workspace immediately after backfilling the trench; reducing the construction workspace such that a minimum of 10 feet between the residence/building and the construction workspace is maintained for a distance of 100 feet on either side of each structure; installing safety fencing along the construction workspace adjacent to each structure for a distance of 100 feet on either side of the residence/building to ensure that construction equipment and materials, including the spoil pile, remain within the construction workspace; or maintaining safety fencing throughout open trench phases of pipe installation. All of the above mitigation measures are included within the Sparrows Point Project Environmental Construction Plan, which is located within Appendix 2A of Resource Report 2, *Water Use and Quality*. The methods of mitigation are identified on Table 8.4.2-1 - Planned Residential and Commercial Development Within 0.25 Mile of the Construction Workspace for the Sparrows Point Project.

Upon completion of construction, AES anticipates that there will be little or no adverse impacts to planned residential or commercial/business developments or subdivisions from operation of the Pipeline. Pipeline related activities will be limited mainly to periodic inspections. On occasion, maintenance and repair may be required, which will include activities similar to construction, though typically in a more limited geographic area and of more sporadic and limited frequency than inspection visits. This type of activity will be very short-term in nature.

Existing Residences and Buildings

Construction of the Project will not directly impact existing residences and buildings within the Project Area footprint, other than those owned or controlled by AES. However, 179 residences and 46 other

buildings are located within 50 feet of the Pipeline construction workspace and permanently maintained workspace (see Table 8.4.2-1). Construction activities associated with the Project may cause minor interference with the use and/or enjoyment of the residences and other buildings, mainly from increased noise, heavy vehicle traffic, and dust. However, these adverse impacts are expected to be short-term in nature, lasting only a few weeks at any particular location and will be limited to daylight hours, generally Monday through Saturday. AES will employ land agents during construction that will notify and coordinate with landowners throughout the construction process to inform them of when construction activities will occur in the vicinity of their homes. The land department will also maintain a toll free hotline for landowners to call to inquire about construction activities. Temporary disruptions of traffic patterns during road crossing activities will be minimized by using flaggers and minor temporary detours if necessary. Many roads will be bored to avoid interruption, and roads that must be open cut will be plated and installed as quickly as possible, typically within one working day. Fugitive dust that may develop along the ROW will be controlled by use of water trucks as necessary. Construction procedures to avoid disruption and minimize impacts are summarized in specific plans for Project elements, including the Environmental Construction, Dredge Management, Spill Prevention, Unanticipated Discovery, and other plans described in Resource Reports 1, 2, 4, 6 and 11.

AES evaluated the route for presence of septic fields/systems within the Pipeline Route during field surveys, and the locations are depicted on the alignment sheets. The Pipeline Route crosses one septic system at MP 66.48. AES has developed construction techniques to address septic field/system crossings. AES plans to bore under the septic system to a minimum depth of five feet as part of the proposed boring of Gap Newport Road. If there are unanticipated conditions discovered in the course of planning or performance, AES will remove and redesign the septic system where crossed by the Pipeline Route where as feasible. If boring beneath the systems is not feasible, or redesign of the septic system is not practicable, then varying the Pipeline Route to avoid the system will be undertaken.

To minimize impacts on the residences and other buildings that are not owned or controlled by AES, AES will develop site-specific plans ("Residential Mitigation Plans") to avoid impacts to these structures during Pipeline construction. These site-specific plans will include the following procedures:

- Maintain a minimum separation distance of 25 feet between each residence/building and the Pipeline;
- In congested areas, designate the construction workspace such that a minimum of ten feet between each residence/building and the construction workspace is maintained for a distance of 100 feet on either side of each structure;
- Avoid the removal of mature trees and landscaping within the edge of the construction workspace unless necessary for the safe operation of construction equipment;
- Restore all lawn areas and landscaping within the construction workspace, consistent with the Commission's Procedures, after backfilling the trench (Commission's Procedures means the FERC required and/or recommended Environmental Construction Plan; contained in this project as Appendix 2A to Resource Report 2);
- Install safety fencing along the construction workspace adjacent to each structure for a distance of 100 feet on either side of each residence/building, to ensure that construction equipment and materials, including the spoil pile, remain within the construction workspace; and
- Maintain safety fencing throughout open trench phases of pipe installation.

If a minimum of 25 feet cannot be maintained between the residence and Pipeline construction work area, or if the residence is within the construction work area, a site-specific plan that includes the following construction techniques would be employed. Where conventional pipe lay techniques cannot be used, separate crews are used for clearing and grading, ditching, pipe stringing, welding, lowering in, and backfill will be applied.

The construction contractor for the Pipeline will perform the following construction activities:

- Landowners will be contacted at least 24 hours in advance before coming onto the property.
- Fencing will be installed to isolate the residence and property from the construction work area. This fencing should extend a distance of at least 100 feet on either side of the residence. Silt fencing will be installed as required to prevent the flow of silt on to undisturbed lawns or other undisturbed areas.
- The pipe will be welded into the required length, preferably in a staging area remote from the residence. Field joints will be coated and inspected. at such remote areas.
- If a wheel trencher or trackhoe is too large to perform trenching in the construction area, it may be necessary to use a small backhoe to dig the ditch. Construction activities will be scheduled so that the length of time the ditch is open is as short as possible, and care will be taken to make sure no spoil spills beyond the construction work area.
- The welded pipe section(s) will then be pulled or walked into the construction area using crawlers with sidebooms, trackhoes, or cranes immediately following trenching operations, lowered into the ditch, and backfilled.
- Immediately following the backfill operation, all grading, landscaping, and lawn areas will be restored to original condition.

As an alternative, the construction contractor for the Pipeline may evaluate and recommend a conventional bore, especially if the residence has frontage on a road that the proposed Pipeline Route crosses. A typical conventional bore is described as follows:

- Bore pits would be located on selected temporary workspace and AATWS remote from the residence. A trackhoe or backhoe will be selected for excavating the bore pits at both ends of the bore. Care will be taken to prevent spoil from spilling beyond the construction area. Silt fencing will be installed as required to prevent the flow of silt onto undisturbed lawns or other undisturbed areas.
- A road boring machine will be lowered into one bore pit by a crane. A bore hole will then be advanced for the required distance while pumping water into the bore hole. Water will be provided by transport truck; usually one truckload is all that is required.
- The pipe will be welded into the required length on the opposite side of the bore pit containing the boring machine. The pipe string will be located in the pullback area.
- Once the bore is complete to the required size, the pipe will be pulled back through the bore hole.
- In the vicinity of the residence next to the proposed Pipeline Route and construction work area, all land, trees, and vegetation on the surface will be undisturbed.

8.5 Public Land, Recreation, and Other Designated Areas

8.5.1 Agency Notification and Consultation

AES has consulted the appropriate federal, state, and local regulatory agencies having jurisdiction over the proposed project, including through written correspondence, inter-agency meetings, conference calls, and open houses. A complete list of agencies that AES has performed or initiated consultation with is included in Resource Report 1, *General Project Description*. Additionally, Table 8.4.1-1 provides a summary of municipal agencies contacted and responses received to date.

In accordance with 18 CFR §157.6(d), AES will provide notification of the filing of its application with FERC to landowners, towns, communities, and local, state and federal governmental entities with jurisdiction over or an interest in the Project. Such notice will be mailed within three business days of the date on which the Commission issues notice of the AES application. AES will also publish a notice of the application in a daily or weekly newspaper of general circulation in which the Pipeline facilities are located, within 14 days after the Commission assigns a docket number to the application.

8.5.2 Public or Conservation Land

No portions of the LNG Terminal or the Power Plant (if constructed) will be located on public or conservation land. As for the Pipeline, it will not cross any federally-owned land, including national parks or forests; Indian reservations; national wilderness areas or registered national natural landmarks; national wildlife refuges, waterfowl production areas, or coordination areas; or historic trails designated through the National Trails System Act of 1968, as amended (based on review of Census 2006; United States Department of the Interior, National Park Service [NPS] 2006a; NPS 2006b; NPS 2006d; NPS 2006f; NPS 2006g; National Wilderness Institute 2006; The Nature Conservancy 2006; United States Fish and Wildlife Service [USFWS] 2006; USFS 2006a; USFS 2006b; Wilderness Institute 2006).

Construction of the Pipeline will require crossing some publicly-owned parcels of land as identified within Table 8.5.1-1 – Publicly Owned Parcels or Parcels Containing Conservation Easements Crossed by the Sparrows Point Project. These properties and pertinent information as to routing through or along them are discussed below.

In Maryland, two crossings of Gunpowder Falls State Park will be required for construction of the Pipeline, regardless of which Pipeline Route alternative is considered (see Resource Report 10, *Alternatives*). The preferred route has been selected to minimize potential impacts to this crossing by using an existing utility corridor (powerline) for the crossing location. Gunpowder Falls State Park contains nearly 18,000 acres and is located within the counties of Harford and Baltimore (Maryland Department of Natural Resources [MDNR] 2006a). The park is long and narrow with varied topography that was established to protect the stream valleys of the Big and Little Gunpowder Falls and the Gunpowder River. The Pipeline crossings will be from MPs 18.19 to 18.39 and 22.21 to 22.29, and are included within the alignment sheets within Appendix 1A of Resource Report 1, *General Project Description*. AES has consulted with the MDNR and shared proposed routing plans with senior staff. AES has received both written (MDNR 2006) and oral feedback as a result of this consultation. This consultation has identified fisheries information relative to the waterbodies crossed in the two park segments. Access was provided by MDNR to survey the Pipeline's prospective route for resource information, which has been included in the alignment sheets included as Appendix 1A of Resource Report 1, *General Project Description*. Both segments of the Pipeline that will cross Gunpowder Falls State Park will utilize existing ROWs of an overhead electric powerline to cross these portions of the park. AES will minimize tree clearing along the margin of the ROW to the maximum extent practicable, while still maintaining safe working conditions, by overlapping its construction and permanent ROW with that of the powerline so as to maintain a safe offset distance from the powerline and stanchions within the ROW. AES will continue the consultation process with the MDNR to finalize a design plan for the crossing of Gunpowder Falls State Park during the final design of the Pipeline, including further consultation as to park usage (to avoid/minimize conflict of park use and

construction), specific restoration re-vegetation, and other critical information that may affect MDNR's management of the park and the construction/restoration process. Final design will occur between the last quarter of 2007 and first quarter of 2008, with additional MDNR consultation also occurring during this period.

The Pipeline Route will also cross the Baltimore County Waste Water Treatment Plant property at MP 7.55. This proposed crossing of the wastewater treatment plant in Baltimore County allows the route to parallel I-695 while on the property of the treatment plant. AES has coordinated with the treatment plant during the surveying of the proposed Pipeline Route and will continue to coordinate with the treatment plant throughout the FERC review process. The results of the initial survey indicate that there would be no impact to the operations of the treatment plant from the proposed Pipeline Route. The crossing of the sewer mains for the plant is located to the northwest of I-695, and the exact location and crossing method will be determined in consultation with the treatment plant personnel.

The Pipeline Route crosses or intersects the ROW for I-695 four times and Interstate Highway I-95 (I-95) once. The Pipeline Route also crosses and parallels property owned by the State of Maryland State Roads Commission. The Pipeline Route follows I-695 in a north and northwest direction, except for minor deviations necessary to avoid highway interchanges for approximately six miles. AES consulted with the Maryland Department of Transportation (MDOT), Maryland State Highway Administration (SHA), an agency of Transportation MDOT that receives funding from Maryland's Transportation Trust Fund, and the Maryland Transportation Authority (MDTA). AES provided briefings to senior personnel of these Maryland State agencies responsible for managing these federally funded highways during the surveying process concerning routing that traversed funded the highways, and the Project was provided survey access to evaluate pipeline crossing locations and routing both in parallel and in potentially shared ROW segments. AES will continue to coordinate with these agencies throughout remaining surveying and during design stages of the project to ensure consistency with ROW use and future highway planning.

The Pipeline Route will also cross several other state and county roads, including the following:

- MD 440, Dublin Road
- US 1, Belair Road
- MD 152, Fallston Road
- MD 23 East West Highway
- MD 24, Rocky Road
- MD 543, Ady Road
- MD 623, Castleton Road

The Pipeline Route generally parallels MD 440 for several miles. However, the Pipeline Route will be located several hundred feet from Dublin Road adjacent to an existing Columbia pipeline. MD 440 also crosses the Pipeline Route at MP 39.33. This crossing location, which is the same crossing location for the existing Columbia pipeline, will be the only place where the Pipeline and related facilities will be located within the ROW for MD 440.

The Pipeline Route will cross (not parallel) the remaining state and county roads listed above.

MDNR requested in the course of its studies that AES also consult the Maryland Highway Needs Inventory (HNI) for possible state road projects that may be undertaken along the project alignment. The HNI is a technical reference and planning document which identifies highway improvements to serve existing and projected population and economic activity in the State as well as address safety and structural problems that warrant major construction or reconstruction. The projects identified in the HNI document represent only an acknowledgment of need based on technical analysis and adopted local and regional transportation plans. The HNI is not a construction program, and inclusion of a project does not represent a commitment to implementation. The HNI is also not financially constrained nor is it based on revenue forecasts. The HNI may be considered as a compilation of projected major highway deficiencies.

The first four roadways are listed in the HNI. US 1, MD 152 and MD 24 are listed as potential multilane reconstruction projects, while MD 23 is listed as a potential two-lane reconstruction project.

The HNI summary notes that only a portion of the projects listed will be addressed in the future through selective capital improvements. Many of these needs will remain unfulfilled because MDOT does not anticipate that the gap between needs and resources can ever be completely closed, even with the infusion of new revenue. Finally, the HNI is noted to be based on a technical evaluation of highway conditions. The general scope and approximate cost of needed highway improvements are based on the application of reasonable design standards. However, this does not preclude further considerations of alternative solutions to the problem, or the "no build" option. Ultimately, more detailed project planning studies would be conducted on potential projects to determine more precise cost estimates and acceptable solutions to the identified need. The HNI lists only major capital construction projects which entail a significant increase in traffic capacity, extensive right-of-way, high cost or major impact.

Insofar as the project generally crosses these roads and avoids co-location, and the anticipated methods of crossing would be by bored or other similar means that does not significantly disrupt traffic, and the probability of actual expansion is dependant on many factors listed in the HNI, AES does not foresee any conflict of use issues that could not be resolved with each of the roadways and their management.

Prior to construction and during the design phase of the Project, AES will work with the appropriate agencies and will submit applications for road crossing permits for all proposed road crossings, as necessary. Future roadway expansion plans and mitigation measures will be discussed and agreed upon as part of the application review process. A typical mitigation measure that may be implemented to avoid or minimize potential impacts to roadways is the installation of the Pipeline with extra depth of burial to facilitate any potential future expansion of the roadway.

Except for a presence within the roadway ROW for final design surveying and engineering, and to monitor the bored crossings during the construction phase of the project, there should be little or no physical or traffic impacts to these roads from the operation and maintenance of the Pipeline facilities. However, lower intensity usage roads will be reviewed for potential crossing using open cut construction technologies.

In Maryland, other than Gunpowder Falls State Park, the Pipeline will not cross any other state-owned land, including state forests; state game lands or wildlife management areas (based on review of MDNR 2006b).

In Pennsylvania, the Pipeline will not cross any state-owned land, including state forests; state game lands or wildlife management areas; state-designated natural or wild areas; or state-designated recreation or scenic areas (PDCNR 2006a; PDCNR 2006b; PDCNR 2006d; PDCNR 2006h; PDCNR 2006i; Pennsylvania Game Commission 2006).

The Pipeline Route will cross the Chester County Water Authority (Authority) Waste Water Treatment Plant property at MP 87.52. The proposed Pipeline Route near the Authority plant was sited in cooperation with members of the Authority. AES has met with members of the Chester Water Authority and is in the process of developing potential mitigation measures for the crossing of their two main water lines. Potential mitigation measures discussed included boring under the lines by conventional means. The remainder of the Pipeline Route through this area follows the existing Columbia Pipeline, and the results of the initial survey indicate that there would be no impact to the operations of the treatment plant from the proposed Pipeline Route.

AES contacted landowners, local governments and conservancies beginning in May 2006 to identify parcels encumbered by conservation easements that will be crossed by the Pipeline. Sixty-four parcels that contain conservation easements, most of which are agricultural easements, were identified and are listed within Table 8.5.1-1 – Publicly Owned Parcels or Parcels Containing Conservation Easements Crossed by the Sparrows Point Project.

Additional other-designated areas, such as publicly owned parcels utilized as landfills, are discussed within Section 8.5.5 under the heading, "Contaminated Sites and Landfills," and schools and parks are identified and discussed within Section 8.5.5 under the heading, "Special Use Areas."

8.5.3 Natural, Recreational, or Scenic Areas

No portions of the LNG Terminal or the Power Plant (if constructed), and no facilities associated with the Pipeline, occupy or cross any federally designated or recognized natural, recreational, or scenic areas, or registered natural landmarks, including National Scenic and Recreational Rivers; National Wild and Scenic Rivers; recreational, scenic, or historic trails designated through the National Trails System Act of 1968, as amended; or wilderness areas designated under the Wilderness Act of 1964, as amended (NPS 2006a, NPS 2006b, NPS 2006d, NPS 2006e, NPS 2006f, National Wilderness Institute 2006).

Construction of the LNG Terminal and Pipeline will involve certain crossing of natural, recreational or scenic areas. In Maryland, the Chesapeake Bay is used for recreational fishing and boating. During various seasons, charter boat companies and private individuals use the Bay to fish for flounder, white perch, and striped bass among other species. In addition, blue crab is one of the most important species harvested in the Bay (MDNR. 2006d). Construction of the LNG Terminal will include widening and deepening the existing approach channel and turning basin offshore of the Terminal Site to accommodate the LNG marine traffic expected at the LNG Terminal. The discussion in Section 1.5.1.2 of Resource Report 1, *General Project Description*, provides a more detailed description of the dredging activity.

The Pipeline Route is located near or crosses four trails:

- The Star-Spangled Banner National Historic Trail crosses eight counties within the boundaries of the State of Maryland, the City of Baltimore, Maryland, and Washington, and the District of Columbia (Star Spangled Banner National Historic Trail Study 2005). The trail traces the route from the arrival of the British fleet in the Patuxent River in Calvert County and St. Mary's County, Maryland, in the War of 1812, to Fort McHenry, the site of the victory of the Americans on September 14, 1814. While the Star Spangled Banner Trail has not yet been established as a National Scenic Trail, the route is subject to consideration for the designation. The trail comes ashore approximately 2.5 miles east of the proposed Terminal Site, and continues north towards and parallels I-695. The Pipeline Route crosses the proposed trail at approximately MP 2 where both the trail and Pipeline Route parallel I-695. The route of both the Pipeline and the Star Spangled Banner Trail parallel the existing I-695 highway corridor. Cultural resource surveys, which are summarized within Resource Report 4, *Cultural Resources*, were conducted along the Pipeline Route within the highway corridor. The surveys confirmed that the

area is predominantly disturbed and did not reveal the presence of any cultural resources.

- The Old Maryland and Pennsylvania (MAPA) trail is a portion of the Maryland and Pennsylvania Railroad, which was established in 1901 and was a narrow gauge 77-mile line that connected Baltimore, Maryland and York, Pennsylvania. The Maryland portion was abandoned in 1958; the Pennsylvania portion was abandoned in the 1980s. Since then, the Maryland and Pennsylvania Railroad Preservation Society has worked to preserve this railroad (MAPA 2006). Harford County Department of Parks and Recreation's "Rails to Trails" project has since developed a portion of the railroad line from Heavenly Waters Park in Bel Air to Friends Park in Forest Hill as a recreational trail (Harford 2006). The first phase, 1.9 miles between Tollgate Road and Williams Street in Bel Air, is a hiker, biker, and equestrian trail with a spur connector (walkers only) leading to the Harford Mall and Harford Mall Annex. The second phase, which was completed in the Fall of 2000, connects the Blake's Venture park off Bynum Road in Forest Hill to Friends Park. The third phase, which is currently in the planning stage, will run from Tollgate Road south, behind the Equestrian Center, cross over Winters Run, and traverse the rolling hillside of Edgeley Grove Farm. The Pipeline route crosses the old MAPA Railroad at Milepost 31.80. However, the Pipeline Route does not cross the Harford County Department of Parks and Recreation's recreational trail project. The MAPA trail crossing is along an existing right-of-way that the Pipeline Route parallels. AES expects to use a perpendicular crossing in this location to minimize potential impacts to the MAPA trail. The potential impacts to the MAPA trail thus have been minimized. The Brandywine trail is 35-miles long and located in the Brandywine Valley (Brandywine Trail. 2006). The trail parallels the Brandywine Creek and Brandywine River and is maintained by the Wilmington Trail Club. The Pipeline Route crosses the trail at approximately MP 74.19. The crossing of the Brandywine trail will occur within an existing right-of-way that the Pipeline Route parallels, and is anticipated to be a perpendicular crossing to minimize potential impacts. As such, the potential impacts associated with the crossing are considered to be minimal. The 190-mile long Mason Dixon Trail connects the Appalachian Trail with the Brandywine Trail (Mason Dixon Trail System 2006). This trail starts at Whiskey Springs, on the Appalachian Trail, in Cumberland County, PA and heads east towards the Susquehanna River. The trail then follows the west bank of the Susquehanna where the Pipeline Route crosses the trail at approximately MP 43.88. Mason Dixon Trail eventually ends at the banks of the Brandywine River. The crossing of the Mason Dixon trail will occur within an existing right-of-way that the Pipeline Route is paralleling, and is anticipated to be a perpendicular crossing to minimize impacts. As such, impacts associated with crossing are minimal.

The Pipeline Route crosses Deer Creek at MP 35.54 in Harford County Maryland, which is listed by Maryland as a Scenic and Wild River (MDNR 2006b). Deer Creek's headwaters form in southern Pennsylvania, and flow east across northern Maryland to the Susquehanna River. The crossing of Deer Creek will occur within an existing ROW that the Pipeline Route parallels. The Deer Creek crossing is anticipated to be a perpendicular crossing to minimize potential impacts. AES also has established Best Management Practices (BMPs) for stream and waterbody crossings, provided in Resource Report 2, *Water Use* and *Quality*, that will be employed to further reduce potential impacts associated with crossing.

In Pennsylvania, the Pipeline Route will not cross any state-designated natural areas, wild areas, or recreational or scenic areas (PDCNR 2003, PDCNR 2006a, PDCNR 2006c, and PennDOT 2006).

The Pipeline Route crosses one National Register of Historic Places (NRHP) listed historic district, Doe's Run Village, and one unnamed NRHP undetermined district referred to as Kirk's Mills, both of

which are described in Resource Report 4, *Cultural Resources*. The Doe's Run Village, occupying approximately 850 acres, consists of 26 contributing structures dating from the late 19th century that collectively are considered to be historically significant. The Pipeline Route crosses the district for approximately 5,588 feet beginning at MP 51.2. The Kirk's Mills district has not been fully reported nor has its NRHP eligibility been determined at this time. However, it is recognized by the Pennsylvania Bureau of Historic Preservation as potentially culturally significant. The Pipeline Route crossed the Kirk's Mills district for approximately 2,964 feet at MP 70.7. The Pipeline Route does not cross any other recognized places of historical or cultural significance in Pennsylvania or Maryland.

8.5.4 Coastal Zone Management Areas

Maryland's Coastal Zone Management Program (CZMP) incorporates all of Baltimore, Harford and Cecil counties within Maryland's Coastal Zone (MDNR 2006; Maryland's Coastal Zone Management Program 2006). The CZMP includes the area within which the LNG Terminal will be located, as well as the portions of the Pipeline Route located in Maryland. The Pipeline Route is not located within or will not affect the Pennsylvania Coastal Zone (PADEP 2006). AES consulted with the MDNR, the lead agency for the CZMP, regarding review of the Project for consistency with the Coastal Zone Management Act (CZMA).

As required by the CZMP, AES has prepared and filed a Coastal Facilities Review Act (CFRA) application with the Maryland Department of the Environment (MDE), Wetlands and Waterways Program. This application comprises the formal "umbrella" application process for environmental permitting associated with the LNG Terminal and, to the extent applicable, the Pipeline within Maryland. The CFRA application includes applications to address air emissions, wetland and waterbody crossing, water use and discharge, and wastewater discharge, and certain other applications required to be filled with the State of Maryland. This Resource Report and the 12 other Resource Reports that comprise the Environmental Report for the Project provide the basis for the environmental review associated with the various Maryland applications under CFRA.

In addition, according to the Critical Area Commission for the Chesapeake Bay and Atlantic Coastal Bay (MDNR 2006f), the LNG Terminal and portions of the Pipeline Route are also located within areas regulated by the State of Maryland's Critical Area Act. The LNG Terminal and the portions of the Pipeline Route located within the State of Maryland's Critical Area are listed within Table 8.5.4-1 Summary of Portions of the Project Site Located within Maryland's Designated Critical Areas.

The Chesapeake Bay Critical Area Protection Program is an important measure that aids in the protection of Maryland's coastal areas. In response to concerns about the quality and productivity of the Chesapeake Bay, the Chesapeake Bay Critical Area Protection Program was established in 1984 with the passage of the Critical Area Act, a comprehensive resource protection program for the Bay and its tributaries. The Critical Area Act defines a "Critical Area" as all land within 1,000 feet of the mean high water line of tidal waters, or the landward edge of tidal wetlands and all waters of and lands under the Chesapeake Bay and Atlantic Coastal Bays and tributaries. The Critical Area Act establishes the Chesapeake Bay Critical Area and Atlantic Coastal Bays Critical Area Protection Programs and the Critical Area Commission to enable the State and local governments to jointly address the impacts to habitat and aquatic resources that may result from land development within the Critical Area.

The goals of the Critical Area Protection Programs are to:

- Minimize adverse impacts on water quality that result from pollutants that are discharged from structures or conveyances or that have run off from surrounding lands;
- Conserve fish, wildlife, and plant habitat in the Critical Area; and
- Establish land use policies for development in the Critical Area that accommodate growth and also address the fact that, even if pollution is controlled, the number,

movement, and activities of persons in the Critical Area can create adverse environmental impacts.

Land within the Critical Area is categorized by its predominant use and the intensity of its development. This system contains three classifications or categories of different land development areas: Intensely Developed Areas (IDAs), Limited Development Areas (LDAs), and Resource Conservation Areas (RCAs).

- Limited Development Areas (LDA) - These are areas with low to moderate development intensity uses. They contain areas of natural plant and animal habitats and the quality of runoff from these areas has not been substantially altered or impaired. At the time of initial mapping, these areas had housing density ranging from one dwelling unit per five acres up to four dwelling units per acre. They were areas not dominated by agriculture, wetland, forest, barren land, surface water, or open space. They also include areas similar to IDA, but less than 20 acres in size, and areas having public sewer or water or both.
- Intensely Developed Areas (IDA) - Those areas, where residential, commercial, institutional, and/or industrial, developed land uses predominate, and where relatively little natural habitat occur. At the time of initial mapping, these areas had housing densities equal to or greater than four dwelling units per acre, or a concentration of nonresidential uses or public sewer and water collection and distribution systems serving an area with a housing density greater than three dwelling units per acre.
- Resource Conservation Areas (RCAs) - are characterized by natural environments or by resource-utilization activities. Resource-utilization refers to such activities as agriculture, aquaculture, commercial forestry and fisheries activities, which Criteria are used by local jurisdictions to develop the classification considered protected land uses. The criteria for use of the RCA area limit new development in RCAs to one dwelling unit per 20 acres because studies indicated that when large amounts of resource-utilization land have been converted to residential development, it is usually in parcels of 2-, 5- and 10-acre lots. The "1-in-20" criterion is intended to ensure that RCAs maintain a natural character, preserving favored land uses while avoiding fragmentation of areas adequate to robust wildlife and plant habitat. New commercial and industrial facilities are not allowed in RCAs, and development which is allowed in the RCAs must conform to the standards set for LDAs. The criteria used by local jurisdictions to develop the classification require that farmers develop plans that promote the use of BMPs to prevent the runoff of soil, nutrients and other materials that degrade water quality. The feeding and watering of livestock must be kept well away from tidal waters although low-impact grazing is permitted. Timber harvests conducted in the Critical Area must be done pursuant to a Timber Harvest Plan approved by the MDNR. Such plans, prepared by professional foresters, provide for the protection of water quality, continuity of habitat and the reforestation of timbered areas.

There are a total of 12 Critical Area crossings along the Pipeline Route, with a total of 3.03 miles or 15,995 feet crossed by the Pipeline. All Critical Area lands are in the southern portion of the Project Area, and are located within Baltimore County, Maryland. There are eight crossings of IDA lands, including the LNG Terminal totaling 11, 932 feet, 4 crossings of LDA lands totaling 4,063 ft, and no crossings of RCA lands within the Project Area. The LDA and IDA classifications or categories of land development areas allow for use such as the LNG Terminal and the associated pipeline as they are consistent with the existing development intensity. AES will continue to work with MDE during its review of the Project CFRA application and be responsive to any questions or comments that arise during the review.

8.5.5 Other Designated Areas

Contaminated Sites and Landfills

AES contracted with FirstSearch Technology Corporation to prepare an Environmental First Search Report, which summarizes sites/areas listed on various environmental databases maintained by federal and state agencies within 0.25 mile of the Project, including 0.25 mile of the LNG Terminal and Pipeline alignment (FirstSearch 2006). The databases searched include locations of environmental investigation and cleanup (such as spill sites, or "Superfund" (Comprehensive Environmental Response, Compensation and Liability Act - or CERCLA) sites, operating facilities that generate or manage hazardous waste (Resource Conservation and Recovery Act - RCRA), or facilities listed for evaluation of air emissions, PCB generation or similar factors. The properties that affect land resources, are listed in the regulatory databases searched, and that come within 0.25 mile of the Project, are identified within Table 8.5.5 -1, "Contaminated Sites and Landfills Located within 0.25 Mile of the Project."

No areas of the Terminal Site are listed as having Superfund designations on the property. The neighboring Bethlehem Steel property is identified as being subject to RCRA Corrective Action - this listing is in reference to a 1994 Consent Decree issued to the former Bethlehem Steel Corporation (BSC) to address correction of air emissions issues, landfill operation issues, investigation and corrective action of apparent waste disposal or spill locations, and waste minimization and recycling initiatives. The Consent Decree does not cover the proposed Terminal Site nor remaining areas of the former shipyard.

Note that from this search no areas of the Terminal Site are listed as having Superfund designations on the property. The neighboring Bethlehem Steel property is identified as being subject to RCRA Corrective Action - this listing is in reference to a 1994 Consent Decree issued to the former Bethlehem Steel Corporation (BSC) to address correction of air emissions issues, landfill operation issues, investigation and corrective action of apparent waste disposal or spill locations, and waste minimization and recycling initiatives. The Consent Decree does not cover the proposed LNG Terminal nor remaining areas of the former shipyard.

Along the Pipeline Route, there are several properties that are listed as Leaking Underground Storage Tank (LUST) spill sites or solid waste (SW) landfill sites that are located within 0.25 mile of the Pipeline alignment. There are a limited number of properties that the Pipeline will cross that are listed as SW landfill sites - while the Pipeline will cross these properties, attention has been given to centerline routing to avoid or minimize the potential to cross the footprint or affected area of waste on the properties.

The Strasburg Landfill covers 22 acres near Coatesville in western Newlin Township, Chester County, Pennsylvania. In 1983, the Pennsylvania Department of Environmental Protection (PDEP) found benzene, vinyl chloride, 1,2-dichloroethane, copper, and lead in on-site monitoring wells, and various chlorinated organic compounds in an off-site private well downgradient of the landfill. The PDEP analyses identified the same contaminants in leachate from the landfill. The landfill was closed in 1983 by the PDEP. After it was closed, the landfill was capped with a layer of compacted soil, a polyvinyl chloride (PVC) liner, and another layer of soil and weathered rock. Leachate collection and treatment systems and monitoring wells were also installed around the site. In response to community concerns in 1989, EPA launched an investigation of the landfill and discovered that numerous volatile organic compounds (VOCs), including vinyl chloride, benzene, trichloroethene, and tetrachloroethene, had been detected in groundwater from on-site and off-site monitoring wells. This site was added to the National Priority List (NPL) on March 31, 1989.

Additional studies were performed by EPA, and remediation that began in September, 1999 was completed in September, 2000. Construction has been completed at the site and EPA has determined that under current conditions at this site, potential or actual human exposures are under control. The site has not yet been de-listed from the NPL.

The Scarboro Landfill is located near MP 38.39 of the Pipeline Route in Harford County, Maryland. The Pipeline Route follows the existing Columbia pipeline right-of-way past Scarboro Landfill, and avoids the landfill property entirely.

Utilities

The Pipeline Route crosses several utility lines, including electricity, natural gas, water and sewer. The following provides the utility crossed by the Pipeline Route and the mile post:

<u>Utility</u>	<u>MP</u>
Above Ground Electric Line	1.37
Above Ground Electric Line	1.49
Above Ground Electric Line	1.53
Air Line	1.95
Gas Pipeline	3.42
Gas Pipeline	8.00
Sewer Line	9.63
Utility Corridor	17.93
Power Lines	18.71
Liquids Line	30.90
Power Lines	46.54
Power Lines	47.35
Power Lines	52.33
Chester Water	56.30
Chester Water	56.36
Gas Pipeline (Eastern Shore)	66.00
Liquids Line	75.23
Power Lines	76.51
TRANSCO	81.11
Liquids Line	82.79
Liquids Line	84.39
Liquids Line	84.98
Duke/Tex Eastern	87.33
Columbia	87.57

Railroads

The Pipeline Route crosses several railroads. The following provides the railroad crossed by the Pipeline Route and the mile post:

<u>Rail</u>	<u>MP</u>
Railroad Siding	0.71
Railroad Siding	1.06
Railroad Siding	1.35
Railroad Siding	2.58
Railroad Siding	2.69
Railroad Siding	2.89
Railroad Siding	3.06
Railroad	7.48
Railroad	7.99

Railroad	8.52
Amtrak/MARC	8.88
CSX Railroad	17.10
Railroad	44.50

Special Use Areas

No portions of the LNG Terminal or the Power Plant (if constructed), and no facilities associated with the Pipeline, occupy or cross any national or state designated or recognized special use areas, including: maple sugar stands; specialty crops; state-designated natural or wild areas; or national or state forests.

AES initiated consultation with county and local planning agencies in June 2006, to identify any locally designated or recognized special use areas owned by local public agencies or private conservation groups, such as county or local parks or conservation land, which will be crossed by, or located within 0.25 miles of the Project. Based on landowner and field surveys, 56 special use parcels, including campgrounds, cemeteries, quarries, schools, golf courses, and a flower (peony) farm are within 0.25 Mile of the Project or the properties containing the use are crossed by the Project. These are identified within Table 8.5.5-2.

Harford County also notified AES that it had purchased three parcels of land within 0.25 mile of the Pipeline Route for floodplain protection. However, the proposed Pipeline Route does not cross any of these parcels.

8.5.6 Project Impact and Mitigation

Public or Conservation Land

AES has completed a preliminary assessment of the potential impacts to public land associated with construction and operation of the Project, including the potential impacts to Gunpowder Falls State Park, roadways and publicly-owned utilities. As may be appropriate and necessary, AES is developing measures to avoid or minimize potential impacts to such areas and will be working closely with the appropriate agencies during the engineering design phase, which AES anticipates will commence in the first quarter of 2008. Preliminary mitigation measures identified by AES are listed in Table 8.5.5-2. A final determination of mitigation measures will be made in consultation with affected landowners and will be incorporated into the final design for the Project, beginning the first quarter of 2008. The selected measures will be submitted to the Commission. All conservation lands crossed by the Pipeline Route are subject to agricultural conservation easements. Potential impacts to conservation lands are anticipated to be minor and short term in duration, and such impacts largely will be mitigated by implementation of the Commission's agricultural land mitigation practices described in the *Procedures*. Additionally, AES has contacted County Soil Conservation Services, agricultural preservation boards, as well as the entities holding the agricultural conservation easements, to develop appropriate mitigation measures. These measures have been incorporated into Appendix 2A of Resource Report 2, *Environmental Construction Plan*. Aboveground structures have not been sited within properties that are subject to agricultural conservation easements. Construction and operation of the Pipeline will not have any permanent impacts on agricultural land subject to conservation easements because these lands will be restored to preconstruction conditions. Agricultural practices are expected to resume in these areas upon completion of construction activities.

Natural, Recreational, or Scenic Areas

No portion of the LNG Terminal or Power Plant (if constructed) occupies or crosses state and local public land, recreational land, and other special use areas. Potential impacts to recreational fishing and boating within the Chesapeake Bay from the construction of the LNG Terminal and Power Plant (if constructed) are anticipated to be minor and short-term in duration. Onshore public fishing is currently not allowed at the proposed LNG Terminal location. The proposed Terminal Site is located outside of

popular fishing areas identified by the MDNR Chesapeake Bay Report. In addition, the Terminal Site is located within a heavily industrialized area for which the MDE has issued several advisories to avoid consuming certain fish caught in the Back River and Patapsco/Baltimore Harbor River area, including channel catfish, common carp, and white catfish. Data for the three largest Maryland commercial fisheries (Blue Crab, Oyster, and Striped Bass) were available through the Maryland Commercial Fisheries Annual Landings Data Set that pertained to the proposed Project Area (Patapsco River and the north-central Chesapeake Bay), and are summarized below by fishery and total annual landings in pounds.

- Blue crab (*Callinectes sapidus*): 2004 total landings of 31,987,749 pounds with 0.002 percent (48,417 pounds) of total catch harvested in the Patapsco River.
- Atlantic Oyster (*Crassostrea virginica*): 2004 total landings of 63,057 pounds with 0.03 percent (1,956 pounds) of total catch harvested in the north-central Chesapeake Bay region (please note that this is the area cited that is closest to the Project Area, but is not part of it).
- Striped bass (*Morone saxatilis*): 2004 total landings of 1,924,470 pounds, with 0.003 percent (5,659 pounds) of total catch harvested in the Patapsco River.

Currently, the Patapsco River including the Baltimore Harbor has been closed indefinitely to shellfish harvest. Therefore, construction of the Project will not result in any immediate impact on the harvesting of shell-fisheries within or adjacent to the Project Area. Commercial harvest of migratory species such as blue crab and striped bass is minimal in the Patapsco River, accounting for only 0.002 percent and 0.003 percent, respectively, of the total harvest for the State of Maryland. Because any resulting impact from the Project will be temporary, and time of year constraints may be imposed on construction or dredging activities (if deemed necessary), it is unlikely that any harvesting of these fisheries occurring within or adjacent to the proposed Project Area will be adversely affected. Additionally, multiple species of herring and shad, yellow perch, white perch, and American eel, are of commercial and recreational importance within the Chesapeake Bay system. Similar to striped bass, these species are highly mobile and migratory, and most likely will not suffer any adverse impact as a result of the Project because they will avoid the impact area.

The transit route of the LNG carriers does pass through several of the popular fishing areas identified by the MDNR Chesapeake Bay Report. The LNG Terminal is anticipated to receive one vessel approximately every 2 to 3 days (therefore a total of 2 to 3 LNG ships transiting per week). Based on review of data on vessel traffic for the Chesapeake and Brewerton Channel route that will be used by the LNG ships servicing the proposed LNG Terminal, the average number of ships transiting this route will be approximately 1,812 vessels per year. Based on this amount of traffic, the Project is anticipated to have minimal effect on recreational fishing that may result from restrictions on boating encroaching into safety zones around the LNG carriers, as established by the U.S. Coast Guard (USCG). A Waterway Suitability Assessment (WSA) has been developed, including development of ships routing, establishment of security zones, and evaluation of potential effect, if any, on recreational and commercial boating and fishing. The WSA has been submitted to the USCG for its review.

Construction of the LNG Terminal will include widening and deepening the existing approach channel and turning basin offshore of the Terminal Site to accommodate marine traffic expected at the LNG Terminal. See discussion in Section 1.5.1.2 of Resource Report 1, *LNG Terminal Offshore Construction* for a more detailed description of the dredging activity. The dredging is anticipated to require approximately 24 months for completion, occurring during time limited construction periods based on seasonal restrictions. While dredging is underway, it will restrict boating in the immediate vicinity during construction. However, boating restrictions will not preclude access to Bear Creek or the Patapsco River. Safety zones established by the USCG will have temporary impacts on boaters. Boaters will need to go around, rather than traverse, the security zone while LNG vessels are berthed. Boating restrictions are not anticipated to preclude access to Bear Creek or the Patapsco River while LNG vessels are berthed. No long-term or significant impacts on recreational boating are expected.

The Pipeline Route crosses state and local public land, recreational land, and other special use areas. Impacts that may affect use of these lands would be temporary and limited to the duration of the construction period. Once construction has been completed, land use will be restored to pre-existing condition and use. Impacts during operation would be limited to periodic inspection/ surveillance visits, and sporadic maintenance or repair activities. AES is evaluating potential measures for addressing potential construction-related impacts. Mitigation measures will be identified as the alignment of the project is finalized and the design progresses. The selected measures will be submitted to the Commission as part of detailed project engineering and agency consultation, which is scheduled to commence in the first quarter of 2008. These mitigation measures are expected to address any potential adverse impacts associated with construction of the Pipeline. Therefore, construction and operation of the Pipeline will not result in any significant impact to federal, state, or locally-designated or recognized public land, recreational land, or other special use areas.

Contaminated Sites and Landfills

During construction at the proposed Terminal Site, no adverse effects on construction or operation of the LNG Terminal are anticipated from possible contamination. No Federal or State Superfund site status attaches to the Terminal Site. Past environmental investigation of the Terminal Site location has been performed, and sampling of sediments subject to dredging has been performed (see Resource Report 2 for sampling results and discussion). In summary, some environmental contaminants have been detected in sediments subject to dredging for the Project, however the nature and concentrations of compounds of concern in the sediments are consistent with other areas sampled in the Port of Baltimore and the areas to be dredged have been subject to past dredging to establish and maintain existing shipping channels at the former shipyard (see Resource Report 2). Managing these contaminants will be addressed through the process of dredge planning and permitting with the Corps of Engineers (with the goal of eliminating or minimizing impacts that may be associated with dredging), and the proposed process to manage and recycle dredged material (to eliminate or minimize impact from processing the dredge material for recycling - see Dredge Management Plan appended to Resource Report 1). Accordingly, while the presence of limited contaminants in dredge sediment will be managed in the course of dredge operations, management plans will eliminate or minimize potential impacts during LNG Terminal operation. A positive impact is anticipated from the completion of dredging because the shallowest sediments contain the highest concentrations of compounds of concern and will be removed and effectively managed by the dredging process, thereby improving waterway bottom conditions in the dredge area, and exposing relatively uncontaminated sediments to the water column.

Construction of the LNG Terminal will include widening and deepening the existing approach channel and turning basin offshore of the Terminal Site to accommodate the LNG ships expected at the LNG Terminal. Refer to the discussion in Section 1.5.1.2 of Resource Report 1, *General Project Description*, for a more detailed description of the dredging activity. The dredging is anticipated to require approximately 24 months for completion, occurring during limited construction periods based on seasonal restrictions. While dredging is underway, it will restrict boating in the immediate vicinity during construction. However, boating restrictions during dredging activities will not preclude access to Bear Creek or the Patapsco River. Security zones established by the USGC around the Terminal Site may have temporary impacts on boaters. Boaters will be required to go around, rather than traverse, the security zone while it is in effect. The USCG will decide whether the security zone applies around the Terminal Site at all times or only while LNG vessels are berthed. In either event, boating restrictions around the Terminal Site are not anticipated to preclude access to Bear Creek or the Patapsco River. No long-term or significant impacts on recreational boating are expected.

AES has determined that it is not likely to encounter contaminated soil or groundwater along the Pipeline Route during construction of the Pipeline. In the unlikely event that soil and/or groundwater contamination is encountered during Pipeline construction, AES will immediately notify the landowner and work with the appropriate federal and state agencies in compliance with applicable federal and state laws to ensure proper measures are planned and implemented.

The LNG Terminal and portions of the Pipeline Route within the Critical Area have been developed in accordance with COMAR Title 27 Critical Area Commission For The Chesapeake and Atlantic Coastal Bays, which includes redeveloping industrial or port-related facilities in IDAs.

The Pipeline Route will be located, designed, constructed, and maintained so as to provide maximum erosion protection and minimize negative impacts to wildlife, aquatic life and their habitats and maintain hydrologic processes and water quality.

Stream crossings will be designed to reduce increases in flood frequency and severity, retain tree canopy, provide a natural substrate for streambeds, and minimize adverse water quality and quantity impacts of stormwater. The Pipeline Route through the Critical Area is developed to minimize destruction of forests and woodland vegetation.

The Pipeline Route parallels the existing Columbia pipeline right-of-way past the north side of the Strasburg landfill property outside a barrier fence that surrounds the landfill property. The Pipeline Route relative to the landfill property can be viewed on the alignment sheet set included as Appendix 1A to Resource Report 1, sheet number AES-PP-065 (the landfill is located on property numbers 946 and 947, both situated entirely or mostly south of the Pipeline alignment). The routing of the Pipeline past the landfill is expected to have no significant impact on the landfill, nor will the landfill have any significant impact on construction or operation of the Pipeline. The Pipeline Route is located beyond (north of) the physical footprint of the landfill and outside its surrounding fenceline. The Pipeline Route is located generally at elevation 420 to 430 feet above mean sea level to the north of the landfill, whereas the landfill occupies ground at elevations of 320 to 420 feet (i.e., the Pipeline is hydrologically upgradient of the landfill). The landfill control measures were developed with an existing pipeline in place. Therefore, the relatively shallow and temporary disturbance associated with Pipeline construction is not expected to modify site ground or water flow conditions in such a way that would significantly affect control measures at the landfill, such as the landfill cap, water control or monitoring wells.

The proposed Pipeline Route crosses state and local public land, recreational land, and other special use areas. Potential impacts that may affect use of these lands would be temporary and limited to the duration of the construction period. Once construction has been completed, land use will be restored to pre-existing condition and use. Impacts during operation would be limited to periodic inspection/surveillance visits, and sporadic maintenance or repair activities. AES is evaluating potential measures to avoid, minimize or mitigate potential construction-related impacts. Mitigation measures will be identified as the alignment of the project is finalized and design progresses. Therefore, construction and operation of the Pipeline will not result in any significant impacts to federal, state, or locally-designated or recognized public land, recreational land, or other special use areas. The Pipeline Route also follows the existing Columbia Pipeline ROW past Scarboro Landfill and avoids the landfill property entirely.

Utilities

AES has had several discussions with utility owners/operators along the Pipeline Route. Utilities have provided AES alignment sheets of existing utilities and standard setbacks of 25 feet from existing overhead electrical transmission towers and 25 feet from existing pipelines. AES will continue the consultation process with utility owners/operators to finalize design plans for the crossing of utilities along the Pipeline Route.

Railroads

AES has had several discussions with rail line owners/operators along the Pipeline Route. Railroad officials have provided AES alignment sheets of existing rail lines, as well as standard setbacks and crossing methods. AES will continue the consultation process with utility owners/operators to finalize design plans for the crossing of rail lines along the Pipeline Route.

Special Use Areas

The Special Use Area properties that are listed in Table 8.5.5-2 comprise church, park, golf course and some township properties. In the course of communication with the landowners of these properties, care has been taken to discuss with owners property access for survey and to understand site-specific uses, limitations and future plans. During field centerline alignment and survey activities, routing has been performed to eliminate or minimize to the extent practicable pipeline routing that would disrupt current and future use consistent with property owner plans. Some property owners have not provided access (see Table 8.5.5-2), and in those instances AES has used its best engineering and resource management judgment to select a proposed alignment that meets these same goals. Alignments on these specific properties are shown on the Alignment Sheets appended in Appendix 1A of Resource Report 1, *General Project Description*.

Potential impacts that may affect use of these lands would be temporary and limited to the duration of the construction period. Once construction has been completed, land use will be restored to the maximum extent practicable to pre-existing condition and use. Impacts during operation would be limited to periodic inspection/ surveillance visits, and sporadic maintenance or repair activities. As appropriate and necessary, AES is developing mitigation measures to avoid impacts on such areas and will be working closely with the appropriate agencies during the engineering design phase, which is anticipated to commence in the first quarter of 2008. AES has identified mitigation measures that are listed in Table 8.5.5-2. Final selection of the mitigation measures will be made in consultation with the affected landowners and will be incorporated into final design, beginning the first quarter of 2008. The selected mitigation measures will be submitted to the Commission. All conservation lands crossed by the Pipeline Route are subject to agricultural conservation easements. Potential impacts to conservation land are anticipated to be minor and short term in duration, and such impacts largely will be addressed through the implementation of the Commission's agricultural land mitigation practices.

8.6 Visual Resources

No portions of the LNG Terminal or the Power Plant (if constructed), and no facilities associated with the Pipeline, occupy or cross any nationally designated or recognized visual resources or visually sensitive areas, including scenic roads, trails, or rivers (based on review of America's Byways 2006, NPS 2006a, NPS 2006b, NPS 2006c, NPS 2006d, NPS 2006e).

No portions of the LNG Terminal or the Power Plant occupy or cross any state-designated scenic roads (based on review of MDOT 2006).

The Pipeline Route crosses Maryland State Route (SR) 23 at MP 29.85, SR 24 at MP 32.40 and SR 543 at MP 36.50, as well as US Route 1 at MP 23.40, which are all part of the Gunpowder Crossing Scenic Byway as established by the MDOT (MDOT 2006). Crossings of the Gunpowder Crossing Scenic Byway will occur along an existing right-of-way that the Pipeline Route parallels, and are anticipated to be a perpendicular crossing to minimize impacts. As such, potential impacts associated with crossings are anticipated to be minimal. No portions of the LNG Terminal or the Power Plant (if constructed) occupy or cross any state-designated scenic roads (based on review of Maryland Department of Transportation 2006).

No facilities associated with the Pipeline within the State of Pennsylvania occupy or cross state-designated scenic roads (Pennsylvania Department of Transportation).

Construction of the Pipeline will require two crossings of Gunpowder Falls State Park. The crossings will be from MPs 18.19 to 18.39 and 22.21 to 22.29, as described above in Section 8.5.1. Both segments of the Pipeline that will cross Gunpowder Falls State Park will utilize existing powerline rights-of-way to cross these portions of the park. Where the Pipeline will be sited within or adjacent to existing transmission line corridors, the existing viewsheds consist of an alignment of powerline lattice towers that follow a relatively clear corridor (tree clearing has been performed). The Pipeline alignment will be

located approximately 25 feet off the tower base foundations (preliminary determination subject to change based on stability analysis). During construction, some limited tree cutting may be needed for safe worker operation and Pipeline installation. However, once installation has been completed, the maintained ROW should not require significantly more cleared corridor than already exists. See the alignment sheets in Appendix 1A of Resource Report for the specific routing proposed at these locations.

The proposed Terminal Site is located within an existing steel manufacturing and former shipbuilding facility, and therefore will be seen in the context of an existing industrial area. Appendix 8B contains photographs that contain view location and direction of view maps of the Terminal Site from four vantage points: the water's edge at the Community Center at Turners Station (northwest of the proposed Terminal Site), Hawkins Point (southwest of the proposed Terminal Site), MTA Police Building/Coffin Point (west-northwest of the Terminal Site), and from the alignment of the existing shipping channel, north of the Brewerton Channel (approximately due west of the Terminal Site). Also included within Appendix 8B are Photographic Simulations of the LNG Terminal and the Power Plant as proposed by AES and consistent with the LNG Terminal layout provided in Resource Report 1, *General Project Description*. Potential impacts to visual resources and visually sensitive areas (e.g., residences) were minimized with the development of a Project design that is consistent with existing or planned industrial land uses at and adjacent to the Project Area.

The Pipeline route will cross the Octorara River in Lancaster and Chester Counties of Pennsylvania, and the Lower Brandywine River in Chester County, Pennsylvania, both of which are designated as state scenic rivers (PDCNR 2006a).

- The Octorara River crossing will parallel the existing route of the Columbia pipeline corridor and its crossing of the Octorara River. The properties on both sides of the river at the crossing location are owned and maintained by the Authority, which operates a municipal water supply from the Octorara Reservoir located west of the Pipeline alignment.
- The Lower Brandywine River crossing will also be undertaken at existing crossing location of the Columbia pipeline corridor. Existing viewshed elements at this location include a local roadway and stone bridge, and a rail-to-trail pathway present on the easterly side of the river near the crossing location. The proposed Pipeline crossing location is to the south of these features, avoids both to the extent feasible and is not anticipated to affect either the alignment or operation, once the Pipeline is constructed, of either the roadway or stone bridge.
- The Octorara River crossing parallels the existing route of the Columbia Gas Transmission pipeline corridor and its crossing of the Octorara. The properties on both sides of the river at the crossing location are owned and maintained by the Chester Water Authority, which operates a municipal water supply from the Octorara Reservoir located west of the Pipeline alignment.

Both waterbodies are characterized relative to resource features in Resource Report 3, and the crossings will be managed consistent with waterbody crossing construction and mitigation procedures summarized in Resource Report 2. Visual impacts will be temporarily present during construction and will be limited to visible common construction equipment typically associated with trenching construction techniques.

The Lower Brandywine River crossing is also an existing crossing location of the Columbia Gas Transmission pipeline corridor. Existing viewshed elements at this location include a local roadway and stone bridge, and a rail-to-trail pathway present on the easterly side of the river near the crossing location. The proposed crossing location for the Pipeline is to the south of these features, avoids both to the extent feasible and is not anticipated to affect either the alignment or operation, once the Pipeline is constructed, of either feature.

Both waterbodies are characterized relative to resource features in Resource Report 3, *Vegetation and Wildlife*, and the crossings will be managed consistent with waterbody crossing construction and mitigation procedures summarized in Resource Report 2, *Water Use and Quality*. Visual impacts will be present during construction and will be limited to visible common construction equipment typically associated with trenching construction techniques.

Also, as stated above in Section 8.4, there are 179 existing residences within 50 feet of the construction workspace for the Project, and a number of additional residences that are located between approximately 75 and 650 feet from the pipeline right-of-way. The Pipeline Route will be visible from these residences during construction. Existing land use will be restored once constructed. Because the proposed Pipeline Route parallels and will overlap to the extent practicable, the existing Columbia pipeline route, visible features of the route (primarily pipeline markers) will be similar to the existing visible corridor.

AES routed the Pipeline so that construction and operation activities will primarily be adjacent to existing permanent utility and highway ROWs. Similarly, mainline valves and interconnect facilities will be constructed within the permanent Pipeline ROW, in areas of agricultural or open land. Mainline valves and interconnect facilities will be relatively small and will not present a significant change in the visual quality of areas surrounding the Pipeline ROW. Also, AES will install visual screening at these facilities to soften the impact of their appearance. Therefore, the Pipeline is anticipated to be consistent with the existing landscape that is currently visible from visual resources and visually sensitive areas, and will have no or will minimize any effect on these visual resources and visually sensitive areas.

If AES receives any new information from county and local planning agencies, AES will further assess the potential impacts by the Project on any locally designated or recognized visual resources or visually sensitive areas and, as appropriate and necessary, will propose coordination and/or mitigation measures to avoid impacts on such.

8.7 Applications for Rights-of-Way and Other Land Use

The Project does not cross or otherwise affect any land over which federal land-management agencies have jurisdiction. However, the crossing of the Susquehanna River by the Mid-Atlantic Express Pipeline will occur on property that is located within the boundaries of the Conowingo Hydroelectric Project, which is a FERC-licensed hydroelectric power project operated by Susquehanna Power Company and PECO Energy Power Company ("Licensees"), which are subsidiaries of Exelon Corporation (FERC No. 405). Specifically, the proposed pipeline route would cross the Conowingo pool within the Susquehanna River by horizontal directional drill approximately two miles upstream of the Conowingo dam. AES has consulted with FERC Staff and the Licensees concerning the proposed crossing of Conowingo lands and use of Conowingo waters to complete hydrostatic pressure testing of the Mid-Atlantic Express Pipeline. AES understands from these consultations that the Licensees have delegated authority under Article 38(d) of the FERC license for the Conowingo Project to issue a right-of-way for AES's proposed use of Conowingo land and waters. At least 45 days prior to granting a right-of-way, the Licensees must file notice with FERC Staff of their intention to grant the right-of-way and the purpose for which the right-of-way will be granted. The Licensees then may proceed to grant the right-of-way unless requested by FERC Staff within the 45-day notice period to file an application for approval. AES anticipates that it will obtain right-of-way for use of Conowingo lands and waters prior to commencing construction of the Mid-Atlantic Express Pipeline.

8.8 References

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